INTRODUCTION

Research on the Cloud Forest Restoration Project at Soledad Ridge, Santa Rosa Island, aims to understand the properties of soil infiltration, specifically field-saturated soil hydraulic conductivity ($K_{fs}$). Measuring the soil water infiltration rate allows us to calculate potential water reaching plant root systems, the amount of water on the surface, and potential water runoff. The soil types on Soledad Ridge have different organic matter origins including: oak trees, grasses, and coyote brush. In some areas historic non-native herbivore overgrazing resulted in erosion of upper organic layers, exposing large sections of bedrock. We hypothesized that the hydraulic conductivity of water will be lower in bedrock sections as compared to the other soil types present on site.

METHODS

**Location** - Infiltration measurements were taken at various soil types within our restoration plots along Soledad Ridge.

**Soil Type** – We looked at four main soil types at our restoration site: bare bedrock, annual grass, coyote brush, and island oak soils.

**Soil Infiltration to $K_{fs}$** - Hard plastic cylindrical containers ~20 cm in diameter were secured into the ground. One liter of water was poured into the container. Time of soil water infiltration was recorded to calculate the hydraulic conductivity $K_{fs}$.

RESULTS

These results support our hypothesis that bedrock has a lower hydraulic conductivity. This research could be used to inform restoration efforts of more suitable planting and watering locations along Soledad Ridge.

CONCLUSION

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